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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/780,008

02/17/2004

Brig Barnum Elliott

03-4034

9557

25537 7590 11/17/2009

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EXAMINER

HANNON, CHRISTIAN A

ART UNIT

PAPER NUMBER

2618

NOTIFICATION DATE

DELIVERY MODE

11/17/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/780,008	Applicant(s) ELLIOTT, BRIG BARNUM	
	Examiner CHRISTIAN A. HANNON	Art Unit 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) 19-35 and 39-44 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 and 36-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I in the reply filed on 8/19/2009 is acknowledged. The traversal is on the ground(s) that all claims can be read on Figure 1 of the Application. This is not found persuasive because the claims of each group do are distinguishable from Figure one.
2. The Examiner need show only one distinction amongst the group to refute Applicant's claim that "all claims can be read on Fig.1" and only one, in the interest of brevity will be demonstrated.

Regarding Group I (claims 1-18 and 36-38), claim 1 of the group requires "an interface unit that includes a plurality of ports configured to connect to a plurality of user devices," yet in Fig. 1, item 110 shows no such ports, and neither does it show a plurality of user devices.

Regarding Group II (claims 19-35), claim 19 of the group requires outputting an "analog signal to a user device of the plurality of user devices via a port of the plurality of ports." Again, Fig. 1 fails to disclose a plurality of ports or a plurality of user devices, and thus figure 1 cannot be said to read on figure 1.

Regarding Group III (claims 39-44), claim 39 of the group requires "a plurality of interface units configured to connect to a plurality of user devices." Figure 1 shows neither a plurality of interface units nor a plurality of user devices.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1–5, 8-9, 11-18 and 36-38 are rejected under 35 U.S.C. 102(a) as being anticipated by Millar (US 6,831,901).

Regarding claims 1, 17 and 18, Millar discloses a patch panel system comprising an interface unit, or Hub item 130 of figure 3, that includes a plurality of ports, or ports connecting 120-1 120-n to Hub item 130 of figure 3, configured to connect to a plurality of user devices, or plurality of BTS item 120-n of figure 3, the interface unit being configured to receive one or more analog signals from a user devices of the plurality of user devices via a port of the plurality of ports, or analog RF signals originating in BTS items of figure 3 going to Hub item 130 (see column 9, lines 18-24), generate a packet from the one or more analog signals, Hub 130, packetizes data sent from BTS units (see column 7, lines 20-23) and transmit the packet, or transmit packet from input of Hub item 130 to output of Hub item 130, and a radio unit, or Radio access node items 150 of figure 3, configured to receive the packet, or receive packets sent from Hub item 130 to RAN item 150 via Line 342 of figure 3, convert the packet to a depacketized radio signal representing only extracted payload bits, or depacketizing/reconstructing the received bits for use at the RAN, where the payload is the data originated at the BTS meant for connection to the RAN, but was packetized

Art Unit: 2618

merely for transmission through the interface unit/Hub, and transmit the depacketized radio signal representing only extracted payload bits over a radio channel, or propagating the RF (i.e. depacketized signal, that had been packetized for transmission/propagation through the Hub) via the antenna of RAN items¹⁵⁰ to mobile transceiver devices (see figure 1). In addition Millar discloses that a means for binding between a port and a radio channel is based on addresses associated with the port and radio channel (see column 11, lines 51-53).

Regarding claim 2, Millar discloses claim 1, wherein the one or more analog signals are associated with a constant bit rate service, or quality assured service, as disclosed that overhead bits can include parity information, effectively providing a upper level on delays, therefore ensuring quality of at least a constant rate (see column 4, lines 30-35).

Regarding claim 3, Millar discloses claim 3, wherein the interface unit includes a plurality of interface units each connected to a plurality of user devices and the radio unit includes a plurality of radio units configured to be communicative over a plurality of types of radio channels, Millar discloses a plurality of interfaces delineated in pairs of HDC/HUC which interface with the discrete, respective, user device serving different radio channels (see figure 3).

Regarding claim 4, Millar discloses claim 1, wherein the ports include a plurality of different types of ports configured to connect to a plurality of different types of user devices, Millar discloses a down and an up conversion port, associated with different user devices, or different BTS' (see figure 3).

Art Unit: 2618

Regarding claim 5, Millar discloses claim 1, wherein when generating a packet from the one or more analog signals, the interface unit is configured to digitize the one or more analog signals to obtain bit representations corresponding to the one or more analog signals, use the bit representations for a payload portion of the packet, and add header or framing information to the packet that identifies at least one of the radio unit and the radio channel (see column 4, lines 8-40).

Regarding claim 8, Millar teaches claim 1, wherein the radio signal includes one of amplitude modulated waveform and a frequency modulated waveform (see column 8, lines 48-61).

Regarding claim 9, Millar teaches claim 1, wherein the radio unit is further configured to depacketized the packet to obtain depacketized information and wherein when converting the packet to a radio signal, the radio unit is configured to convert the depacketized information to a radio signal (column 9, lines 33-39).

Regarding claim 11, Millar teaches claim 1, wherein a binding exists between the port and the radio channel (see column 7, lines 30-35; column 9, lines 18-24).

Regarding claim 12, Millar teaches claim 11, further comprising a management unit configured to control the binding between the port and the radio channel (see column 2, lines 45-51).

Regarding claim 13, Millar teaches claim 1, wherein the radio unit includes a plurality of radio units with a plurality of associated radio channels, where a plurality of bindings exist between the ports of the interface unit and the radio channels associated

Art Unit: 2618

with the radio units (see column 5, lines 63-67, column 8, lines 34-36, column 9, lines 23-25).

Regarding claim 14, Millar teaches claim 13, further comprising a management unit, or control software, configured to control the binding between the ports of the interface unit and the radio channels associated with the radio units (see column 2, lines 45-51).

Regarding claim 15, Millar teaches claim 14, wherein the management unit uses first addresses associated with the ports and second addresses associated with the radio channels to control the bindings between the ports and the radio channels, at least one of the first and second addresses being used to transmit the packet from the interface unit to the radio unit (see column 11, lines 49-56).

Regarding claim 16, Millar teaches claim 1, wherein the interface unit is further configured to receive signaling information, recognize the signaling information and include the signaling information with the packet (see column 2, lines 45-51).

Regarding claim 36, Millar discloses a patch panel system comprising a first interface unit that includes a plurality of first ports configured to connect to a plurality of first user devices, the first interface unit being configured to receive one or more first analog signals from a first user device of the plurality of first user devices via first port of the plurality of first ports (see operation of Hub item 130, as referenced to rejection of claims 1, 17 and 18), generate a first packet from the one or more first analog signals (see column 7, lines 20-23), transmit the first packet, a first radio unit configured to receive the first packet, convert the first packet to a first depacketized radio signal

Art Unit: 2618

representing only extracted first payload bits and transmit the first depacketized radio signal representing only extracted first payload bits over a first radio channel, or the first RAN item 150-1 of figure 3 (column 9, lines 33-39), a second radio unit configured to receive one or more second depacketized radio signals representing only extracted second payload bits, generate a second packet from the one or more second depacketized radio signals representing only extracted second payload bits and transmit the second packet and a second interface unit that includes a plurality of second ports configured to connect to a plurality of second user devices, the second interface unit being configured to receive the second packet convert the second packet to a second analog signal and output the second analog signal to a second user device of the plurality of second user devices via a second port of the plurality of second ports, or the operation of the claimed "second radio unit" is analogous to the flow of figures 1 and 3 disclosed by Millar when viewed in a right to left fashion, namely "unpacketized" bits are received at the RAN items, second ports, where they are packetized for transmission across the Hub, and then depacketized to the corresponding BTS on the left side of the data flow (see column 7, lines 15-30 and column 9, lines 18-39).

Regarding claim 37, Millar discloses that the first and second interface unit includes the same interface unit, see Hub item 130 of figure 3.

Regarding claim 38, Millar discloses claim 36, wherein the first and second radio units include a same radio unit see RAN item 150-1 of figure 3.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Millar in view of provisional application # 60/371,994 filed 4/12/2202 of which patent 6,934,077 issued and herein serves as reference to the subject matter taught.

Regarding claim 6, Millar discloses claim 5, however fails to teach wherein when adding header or framing information to the packet, the interface unit is configured to add IP header information to the packet. The '077 patent discloses adding header or framing information to the packet, the interface unit is configured to add IP header information to the packet (see column 6, lines 6-18; '077 patent). Therefore it would be obvious to one of ordinary skill in the art to combine the teachings of Millar with those of the '077 patent in order to provide for a known packetizing scheme for transfer of data.

Regarding claim 7, Millar discloses claim 5, however fails to teach wherein when adding header or framing information the interface unit is configured to add Ethernet framing information to packet. The '077 patent discloses adding header or framing information the interface unit is configured to add Ethernet framing information to packet. Therefore it would be obvious to one of ordinary skill in the art to combine the

Art Unit: 2618

teachings of Millar with those of the '077 patent in order to provide for a known packetizing scheme for transfer of data.

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Millar.

Regarding claim 10, Millar teaches claim 1, however fails to teach wherein the radio unit is further configured to encrypt bits associated with the packet. Millar teaches desire of successfully transferring bits, of which encryption is a widely known means. Therefore it would be obvious to one of ordinary skill in the art to combine the teachings of Millar with those of one of the vast array of known encryption schemes to further Millar's goals.

Response to Arguments

8. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTIAN A. HANNON whose telephone number is (571)272-7385. The examiner can normally be reached on Mon. - Fri. 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2618

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. A. H./
Examiner, Art Unit 2618
October 29, 2009

/Edward Urban/
Supervisory Patent Examiner, Art Unit 2618